

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



PCT



(43) International Publication Date
19 January 2006 (19.01.2006)

(10) International Publication Number
WO 2006/006963 A2

(51) International Patent Classification⁷: A61M 11/00.
B05B 17/06

(74) Agent: HAENDLER, Jeffrey, B.; Klarquist Sparkman,
LLP, One World Trade Center, Suite 1600, 121 SW Salmon
Street, Portland, OR 97204 (US).

(21) International Application Number:

PCT/US2005/011086

(22) International Filing Date: 1 April 2005 (01.04.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/559,318 2 April 2004 (02.04.2004) US

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(71) Applicants (for all designated States except US): THE GOVERNMENT OF THE UNITED STATES OF AMERICA as represented by THE SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, CENTERS FOR DISEASE CONTROL AND PREVENTION [US/US]; Technology Transfer Office, 4770 Buford Hwy (K79), Atlanta, GA 30341 (US). CREARE INCORPORATED [US/US]; 16 Great Hollow Road, Hanover, NH 03755 (US).

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SI, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(72) Inventors; and

(75) Inventors/Applicants (for US only): PAPANIA, Mark, J. [US/US]; 3649 Wentworth Lane, Lilburn, GA 30047 (US). BARRY, James, J. [US/US]; 5 Ridge Road, Hanover, NH 03755 (US). BAGLEY, Mark, C. [US/US]; 505 Turnpike Road, Grafton, NH 03240 (US). ELKOUEH, Nabil, A. [US/US]; 28 Chosen Vale Lane, Enfield, NH 03748 (US). KNAUS, Darin [US/US]; 55 Douglas Ridge, Norwich, VT 05055 (US). TRABKA, Robert [US/US]; 155 Gilman Pond Road, Newport, NH 03773 (US).

Declaration under Rule 4.17:

— of inventorship (Rule 4.17(iv)) for US only

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AEROSOL DELIVERY SYSTEMS AND METHODS

(57) Abstract: Methods and systems for aerosol delivery of agents to a patient are described herein. The present system can be used to administer various types of agents, such as a vaccine or other types of pharmaceutical substances. Certain embodiments of the present system utilize an actuator coupled to a disposable aerosolizing element that aerosolizes an agent for delivery to a patient when acted upon by the actuator. The aerosolizing element prevents the agent from contacting the actuator and other non-disposable components of the system so that little or no cleaning or maintenance is required. The present system also can include an aerosolization rate monitor that monitors the rate at which an agent is being aerosolized and provides feedback to the user to ensure that the proper dose is being administered.

A2

WO 2006/006963